

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Armstrong Operating, Inc.
Well Name/Number: Nesbit #2
Location: SE NE Section 4 T31N R51E
County: Roosevelt, **MT;** **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: No, 10 to 15 days drilling time.

Unusually deep drilling (high horsepower rig): No, Triple derrick drilling rig to drill to 7850' TD.

Possible H₂S gas production: Yes, slight.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Triple derrick drilling rig to drill to 7850' TD. No special concerns.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and salt saturated mud system on mainhole.

High water table: Possible

Surface drainage leads to live water: Yes, closest surface drainage is an unnamed ephemeral tributary to Hay Creek, an ephemeral drainage, about 3/8 of a mile to the south and southeast from this location.

Water well contamination: No, all water wells shallower than surface casing setting depth of 1000'. Closest water wells to this location are just off this location, about 100 yards, about 1/4 of a mile to the north and 1/2 of a mile to the south from this location.

Surface hole will be drilled with freshwater and surface casing set and cemented back to surface from 1000'.

Porous/permeable soils: Possibly, sandy gravel soils.

Class I stream drainage: No Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1000' of surface casing cemented to surface is enough surface casing to cover the Base of the Fox Hills Formation.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated.

High erosion potential: No, small cut up to 8.6' and small fill, up to 5.2' required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, 300'X400' location size required.

Damage to improvements: Slight, surface use is a cultivated field. (Inspected 5/18/10)

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28)

Comments: Using existing state highway, FAS 251. Will have to build about 150' of new access road into location off existing state highway 251. Drilling and completion fluids will be recycled to the next location the remaining fluid will be hauled to a commercial Class II disposal. Cuttings will be left in the lined pit. Cuttings and pit will be buried after being allowed to dry. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Buildings and residences about 100 yards off location, about ¼ of a mile to the north, about ½ of a mile to the south and about 5/8 of a mile to the northeast from this location.

Possibility of H2S: Possible.

Size of rig/length of drilling time: Triple drilling rig 10 to 15 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Proper BOP and adequate surface casing should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened, endangered or candidate species identified are the Pallid Sturgeon, Interior Least Tern, Piping Plover and the Whooping Crane.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: No live water nearby. Private surface lands. Surface use is a cultivated field.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private cultivated surface. No concerns.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Wildcat location. No concerns.

Remarks or Special Concerns for this site

Well is a 7850' TD vertical Mission Canyon Formation test in Roosevelt County.

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts are expected.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): Steven Sasaki _____

(title:) Chief Field Inspector

Date: May 17, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Roosevelt County water wells

(subject discussed)

May 17, 2010

(date)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES

MONTANA COUNTIES, Roosevelt County

(subject discussed)

May 17, 2010

(date)

If location was inspected before permit approval:

Inspection date: May 18, 2010

Inspector: Schmidt

Others present during inspection: None